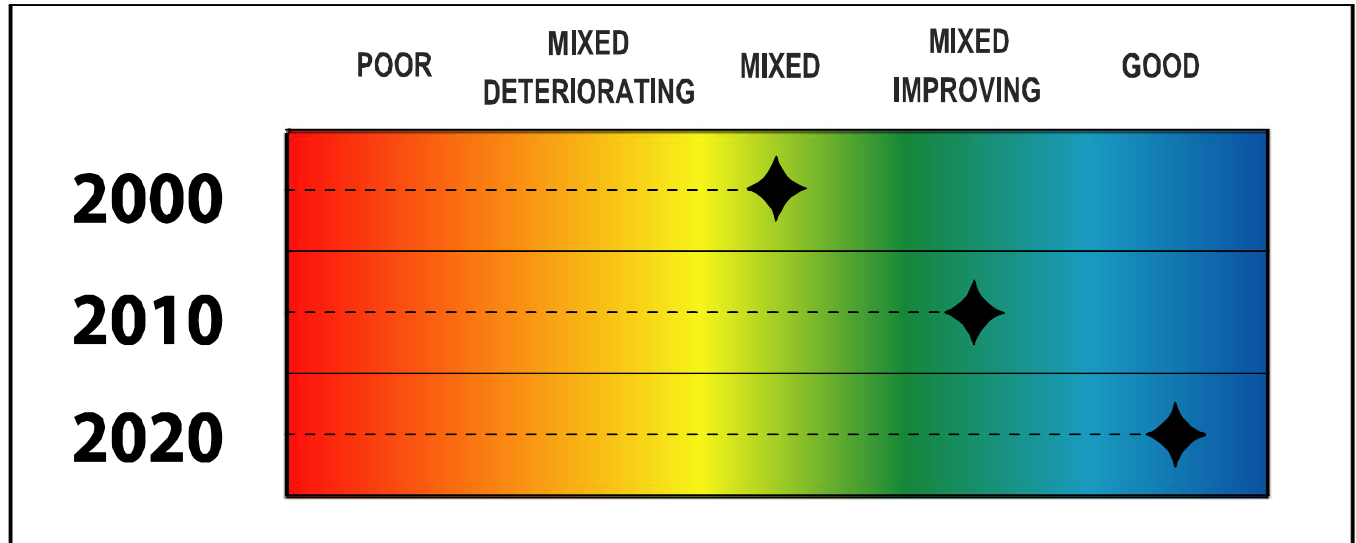


## Subgoal 10

### Is collaborative ecosystem management the basis for decision-making in the Lake Michigan basin?



#### Status

The LaMP provides a lake-level framework serving both as a reference document and a proposal for a process to remediate past errors and achieve a sustainable Lake Michigan basin ecosystem. To this end, every effort has been made to ensure that the Lake Michigan LaMP and updates contain clear, comprehensive goals, specific objectives, a strategic plan, and a system of indicators and monitoring to judge the environmental status and effectiveness of current actions. In providing these to a widespread audience, partnership and collaboration are promoted.

Collaboration among a variety of stakeholders to improve the Lake Michigan ecosystem continues to increase since LaMP 2000. This chapter documents several of these collaborative activities, which have a Great Lakes focus with Lake Michigan involvement, including:

- The Great Lakes Strategy ([www.epa.gov/glnpo/gls/index/html](http://www.epa.gov/glnpo/gls/index/html))
- The Binational Executive Committee
- Great Lakes Binational Toxics Strategy ([www.epa.gov/glnpo/p2/busintro.html](http://www.epa.gov/glnpo/p2/busintro.html))
- The Great Lakes Human Health Network

- The Great Lakes Fishery Commission ([www.glfc.gov](http://www.glfc.gov))
- Shared goals project involving EPA Region 5 and state water quality programs ([www.epa.gov/region5/watergoals.htm](http://www.epa.gov/region5/watergoals.htm))
- The 2002 Wingspread Accord into the Watershed Academy
- The Great Cities Initiative ([www.greatlakescities.org](http://www.greatlakescities.org))
- The Great Lakes Legislative Caucus

Other collaborative activities such as the Lake Michigan Watershed Academy, are discussed in other sections of this document. As the number of groups and efforts grow, the LaMP provides a status report and framework for these efforts.

#### Challenge

To develop a framework for clear goals and objectives that facilitate coordinated actions among agencies and stakeholders. To provide and facilitate opportunities for partnerships and leveraging resources.

#### Great Lakes Strategy

Great Lakes Strategy 2002 was created by the

## **Bills to Restore the Great Lakes Introduced in Congress**

Legislation was introduced in both the U.S. House and Senate to provide significant resources to restore the Great Lakes. The legislation would give states restoration funding in the form of block grants, authorizing between \$4 and \$6 billion. Money would be allocated to states by a formula that takes into account criteria such as population, exposure to the Great Lakes Watershed, number of Areas of Concern and critical habitat.

In order to qualify for funding, states would be required to develop a state management plan. The state plan would be approved by the EPA Administrator and must comply with the President's "Great Lakes Strategy 2002" and appropriate Lakewide Management Plans.

In addition to providing restoration funding, the bill would create a Great Lakes Advisory Board. Comprised of the governors of the Great Lakes states, representatives of the federal government, local mayors, as well as the business, scientific and advocacy communities, the board would be tasked with developing a Comprehensive Lakes Management Plan. This plan would build on the existing catalog of Great Lakes research to provide a clear vision of the Lakes' future. Further, the plan would review the value of current restoration efforts and recommend to Congress and states which programs should be strengthened, combined, or eliminated altogether. Further, it would target:

- Cleaning up toxic hot spots;
- Combating invasive species;
- Controlling pollution from urban and agricultural runoff;
- Restoring and conserve wetlands and critical coastal habitat; and
- Increasing public education of Great Lakes issues.

U.S. Policy Committee – a forum of senior-level representatives of federal, state, and tribal agencies responsible for environmental and natural resource management of the Great Lakes – to help coordinate and streamline the efforts of the many governmental partners involved in protecting the Great Lakes. The strategy focuses on multi-lake and basinwide environmental issues and establishes common goals that the governmental partners work toward. It supports efforts already underway, including LaMPs and RAPs for AOCs, by addressing issues that are beyond the scope of these programs and helping to integrate them into an overall, basinwide context. The strategy also advances the implementation of the United States' responsibilities under the 1987 GLWQA.

The strategy is a concise, policy level statement of basinwide priorities and activities that address the current state of the Great Lakes basin ecosystem and key environmental goals for the future so that a unified approach to implementation can be carried out by a diverse set of federal, state, and tribal agencies. The long-term vision of the strategy can be simply

expressed as follows:

- All Great Lakes beaches are open for swimming all the time.
- All Great Lakes fish are safe to eat all the time.
- The Great Lakes are maintained and enhanced as a safe source of drinking water.
- The Great Lakes basin is a healthy natural environment for wildlife and people.

## **The Binational Executive Committee**

The Binational Executive Committee (BEC) is charged with coordinating the implementation of the binational aspects of the 1987 GLWQA. The BEC is co-chaired by Environment Canada and U.S. EPA, and includes members of the Great Lakes states, the Province of Ontario, and other federal departments and agencies in Canada and the United States. The BEC addresses binational, basinwide issues of concern and provides strategic direction to the LaMPs, RAPs, and other Great Lakes programs such as the Binational Toxics Strategy, and the State of the Lakes Ecosystem Conference.

## Great Lakes Binational Toxics Strategy

The Canada-United States strategy for the virtual elimination of persistent toxic substances in the Great Lakes basin, known as the Great Lakes Binational Toxics Strategy (GLBTS), provides a framework for actions to reduce or eliminate persistent toxic substances, especially those which bioaccumulate. The strategy was jointly developed by Canada and the United States in 1996 and 1997, and it was signed by the two governments on April 7, 1997.

The GLBTS establishes reduction challenges for an initial list of persistent toxic substances targeted for virtual elimination: aldrin/dieldrin, benzo(a)pyrene, chlordane, DDT, hexachlorobenzene, alkyl-lead, mercury and compounds, mirex, octachlorostyrene, PCBs, dioxins and furans, and toxaphene. These substances have been associated with widespread, long-term, adverse effects on wildlife in the Great Lakes and through their bioaccumulation, pose threats to human health. The strategy marked the first time that specific reduction targets were set jointly by the two countries.

Recognizing that virtual elimination is a long-term process, the GLBTS provides the framework for actions to achieve reductions for specific toxic substances in the 1997 to 2006 timeframe. Flexibility is provided in the GLBTS to allow for revision of challenges, timeframes, and the list of targeted substances. The development of baseline measurements for tracking and measuring progress toward reductions is a key element. A "Technical Support Document" appended to the GLBTS provides action items that will be undertaken to pursue reductions ([www.epa.gov/glnpo/p2/bnsintro.html](http://www.epa.gov/glnpo/p2/bnsintro.html)).

## Great Lakes Human Health Network

A Great Lakes-wide human health network was formed by the BEC to maximize resources and efficiencies of scale. The U.S. EPA's GLNPO provides staff resources to facilitate the exchange of information and expertise among health and environmental agencies. The human health network brings together experts and agencies

from throughout the basin to share information and provide technical assistance on human health issues for inclusion in the LaMP. Currently, the Network has representative from six federal government agencies, five tribal government agencies, eleven state and provincial government agencies, and one county government agency. The Network anticipates that the membership will continue to grow as the Network becomes more widely known. Current information on the Network and its work may be found at [www.epa.gov/glnpo/health.html](http://www.epa.gov/glnpo/health.html).

## The Great Lakes Fishery Commission

The Great Lakes Fishery Commission (GLFC) is a critical partner in achieving a balanced and healthy fish community in Lake Michigan, both in terms of controlling exotic species and rehabilitating native species in the lake. GLFC has adopted and implemented an integrated management of sea lamprey (IMSL) approach to control sea lamprey in the Great Lakes. The IMSL process involves using a variety of control

### Illinois-Indiana-Wisconsin Planning Agencies Agree to Consistent Groundwater Planning

In May 2002, the Northeastern Illinois Planning Commission, the Northwestern Indiana Regional Planning Commission, the Southeastern Wisconsin Regional Planning Commission and the Chicago Area Transportation Study signed the Wingspread Tri-State Regional Accord to address a potential water shortage with comprehensive and consistent planning. The accord is an historic agreement in which the four planning agencies along Lake Michigan in Wisconsin, Illinois and Indiana committed to work together as they consider major environmental and economic issues.

Both Milwaukee and Chicago are facing similar water supply constraints in their western suburbs as the metro regions continue to grow. The deep aquifer system is being overtaxed, leaving shallow aquifers as the region's primary future water supply resource. The Illinois State Water Survey estimates that the current and projected use of the region's shallow aquifers is much less than their

## Collaboration on a Watershed Scale: The Muskegon River Projects

This project is a basin-wide analysis of the Muskegon River, integrating the hydrologic, geomorphic, ecologic, and social systems in play to develop a process-based ecosystem model and identify potential stressors. The overarching goal of the Muskegon River Assessment project is to refine the scientific methods and information necessary to manage watershed resources. The project was started 2 years ago with 4 primary objectives:

- Assess and monitor the ecological health of streams, lakes, and wetlands throughout the MRW using a tiered, integrated approach with citizens and experienced scientists;
- Develop regionally defined, quantitative relationships between ecosystem attributes, specific pollutants, and human activities that can be used in management models;
- Develop monitoring technologies that will enable continuous assessment of ecosystem processes at the land-water interface; and
- Increase public awareness of intrinsic values of MRW ecosystems and the science used to make management decisions.

This project will help with developing new bioindicators. For instance, zooplankton have only recently been used as indicators of wetland quality (Lougheed and Chow-Fraser 2000). Using data from previous studies, as well as data on 40 new species from the MRW, investigators updated zooplankton species environmental tolerances, to create a more robust Wetland Zooplankton Index (WZI).

It is also intended to increase public awareness of intrinsic values of MRW ecosystems and the science used to make management decisions. The Muskegon River Watershed website (<http://envirosonic.cevl.msu.edu>) has been designed to allow users to access several forms of acoustic data through an intuitive interface. The web site contains pictures, sounds, videos, the opportunity to perform on-the-fly analyses, and background information about research in the Muskegon River Watershed.

Finally, there is great public and volunteer involvement through the actions and activities of the Michigan Lake and Stream Association (ML&SA), interactions with field crews and formal presentations by researchers on the project. The volunteer activities in the watershed included monthly lake monitoring samples for 30 lakes in and around the Muskegon watershed during the summers of 2001-2003. These data include Secchi depth, chlorophyll-a, total phosphorus, and dissolved oxygen profiles for some lakes.

**Big Rapids Dam Removal and Riverwalk Construction Project.** The city's Muskegon River dam was removed, eliminating an obstruction and reconnecting portions of the Muskegon River. The high gradient portion of the Muskegon River was recovered, which, based on previous work on the Muskegon River, will directly and positively affect the ecology of the river. There are 75,000 dams within the United States. A large number of the antiquated, low head structures are located in the Great Lakes region.

**Rapid assessment of lake sturgeon spawning stocks using instream hydroacoustic technology.** Throughout the Great Lakes Basin, remnant stocks of lake sturgeon exist at low abundance. Traditional fish sampling and assessment methods are marginally effective for these populations and can lead to fish mortality. Lake sturgeon congregates each spring when they spawn in large rivers. Non lethal hydroacoustic technology, successfully used to count salmon in Pacific Northwest river systems, will be used to evaluate the lake sturgeon population in the Sturgeon River, Michigan, and then applied to evaluation of the Muskegon River population.

Portable hydroacoustic technology has been developed to accurately determine size and direction of movement of migrating salmon and trout in the NW, but has been applied to few other species. This project is designed to test and refine the effectiveness of portable hydroacoustic sampling gear for monitoring lake sturgeon spawning in the Sturgeon River, Michigan. To verify data collected by hydroacoustics we are also tagging the spawning population on the spawning site each spring. Data collected by hydroacoustics include fish counts, estimates of individual size, spatial distribution and direction (upstream or downstream) movement.

methods instead of relying solely on chemicals. For example,

GLFC is reducing the minimum lethal concentrations of chemicals used to kill larval sea lampreys in order to protect young lake sturgeon and is scheduling chemical treatments later in the summer to reduce the effects on young lake sturgeon. GLFC has reduced chemical use by 50 percent compared to the amounts used in the 1990s.

GLFC is also using sterile-male releases to impede the reproductive success of sea lampreys, conducting mark-and-recapture studies with juvenile and adult sea lampreys to measure population trends, and researching other strategies to reduce populations of sea lampreys

without harming other parts of the ecosystem.

GLFC technical committees have also developed lakewide lake trout population models that estimate total allowable catches of lake trout, evaluate various fishery management strategies, and estimate damage by sea lampreys to lake trout populations.

Despite the great progress made, sea lampreys continue to kill many fish each year, threatening the restoration of lake trout to Lake Michigan. The principal challenge in controlling the sea lamprey and other exotic species in the lake lies in balancing the use of effective control measures for exotic species with preservation and restoration of native species.

### **Mayors Create Great Cities Initiative**

Mayors of several cities around the Great Lakes created the Great Lakes Cities Initiative (GLCI) in July 2003. GLCI is a binational coalition of mayors and other local officials that works actively with federal, state, and provincial governments to advance the protection and restoration of the Great Lakes. GLCI, chaired by Chicago Mayor Richard Daley and headquartered in Chicago, is a project of the Northeast-Midwest Institute. In creating the project, Mayors stated that they have a direct interest and stake in the sustainability of the Great Lakes. As the world's largest freshwater resource and an international treasure, the Great Lakes are essential to the continued vitality of the cities, townships, villages and counties along the shores and in the surrounding watershed. The GLCI enables mayors and other local officials to be active participants in Great Lakes issues relating to governance, economics, and science.

To date Mayors have not had a coordinated active voice in the development and implementation of Great Lakes policies and programs. A variety of Great Lakes efforts have been underway for decades, but almost none involve municipal leaders. Furthermore, these efforts need more coordination with each other and more focus on long-term protection and restoration of the Great Lakes as a vital resource. GLCI provides the active forum that allows mayors to coordinate their activities in meeting their stated goals in preserving the Great Lakes and enhance public and environmental health as well as the economic prosperity of all Great Lakes communities.

More information is available at:  
[www.greatlakescities.org](http://www.greatlakescities.org)

### **Great Lakes Legislative Caucus Formed**

State lawmakers from the eight states and two Canadian provinces that surround the Great Lakes have formed a caucus to coordinate legislative action on Great Lakes issues. The group, comprised of lawmakers from the 10 states and provincial Legislatures, will serve as a clearinghouse for information, policies and coordination on issues such as beach closings, water diversion, and invasive species. The caucus will have its first meeting in Pittsburgh, PA in October 2004.

### **EPA Region 5 Shared Water Program Goals**

The EPA Region 5 Office of Water is collaborating with state and tribal partners to protect and enhance water quality throughout the area. On December 11, 2001, IEPA, IDEM, the Minnesota Pollution Control Agency, WDNR, EPA Region 5, and the EPA Great Lakes National Program Office (GLNPO) all signed a Joint Commitment to Achieve Shared Water Goals. The shared water goals are as follows:

- Goal 1: All waters in Region 5 will support healthy aquatic biological communities.
- Goal 2: All waters in Region 5 will support fish populations with safe levels of contaminants.

- Goal 3: Designated swimming waters in Region 5 will be swimmable.
- Goal 4: All people in Region 5 served by public water supplies will have water that is consistently safe to drink.
- Goal 5: The quantity and quality of critical aquatic habitat in Region 5, including wetlands, will be maintained or improved.

More information is available at  
[www.epa.gov/region5/goals.htm](http://www.epa.gov/region5/goals.htm).

## Next Steps

Over the next 2 years, the LaMP will support the following activities to increase collaborative activities:

- Continue the development and linkage of local watersheds with basin-wide issues and activities through the watershed academy.